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## OFFICE MEMORANDUM

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**DATE:** August 8, 2000

**TO:** Region Engineers  
Region Associate Delivery Engineers  
Region Construction Engineers  
Resident/Project Engineers/TSC Managers

**FROM:** C. Thomas Maki  
Chief Operations Officer

Gary D. Taylor  
Chief Engineer/Deputy Director  
Bureau of Highway Technical Services

**SUBJECT:** Bureau of Highway Instructional Memorandum 2000-17, Determination of  
Moisture in Soils by Means of Calcium Carbide Gas Pressure Moisture Tester

The Michigan Department of Transportation allows the use of calcium carbide gas pressure meters for moisture determination of soil placed under density control. Tests shall be performed in accordance with procedures defined in the department's Density Control Handbook (DCH).

The DCH does not address test apparatus requirements for this test. In the past, there was never a need to define the equipment requirements because all equipment was provided directly by the Construction and Technology Division. Some of the consultants we are working with now prefer to use much smaller pressure meters (6 gm model) because they are less expensive and easier to carry. Unfortunately, the smaller meters are only accurate for fine grained soils (100 percent passing 4.75mm sieve) and are not appropriate for embankment construction or highway work in general. Error, where it occurs, is always non-conservative, resulting in passing tests on density that should have been rejected. Since we do not specify equipment requirements anywhere in our control documents, consultants are using whatever equipment they prefer. This instructional memorandum is intended to correct this problem until the DCH can be amended. The DCH is currently being revised and is expected to be in place for the next construction season.

Test apparatus shall meet the requirements of AASHTO T217-96. In accordance with this specification, only pressure meters sized for specimens having a mass of at least 20 grams will be permitted.

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Chief Operations Officer

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Chief Engineer/Deputy Director  
Bureau of Highway Technical Services

BOHTS:C/T:PO:kab

Index: Density Testing

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